

[54] **PIPE WRENCHES**
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[63] Continuation-in-part of Ser. No. 21,376, Mar. 20, 1970, abandoned.
[52] U.S. Cl.81/145, 81/146
[51] Int. Cl.B25b 13/14, B25b 13/18
[58] Field of Search81/145, 146, 147

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[57] **ABSTRACT**

A pipe wrench comprising a handle terminating in a rigid jaw having a serrated gripping surface and a plurality of teeth along one surface of the handle. A movable jaw assembly having a serrated gripping surface, an opening therethrough and a plurality of teeth along the opening is slidably positioned over the handle so that the two sets of teeth are in locking engagement. A spring means is positioned to communicate with the opening and the handle, the depression of which disengages the teeth, permitting sliding adjustment.

3 Claims, 2 Drawing Figures

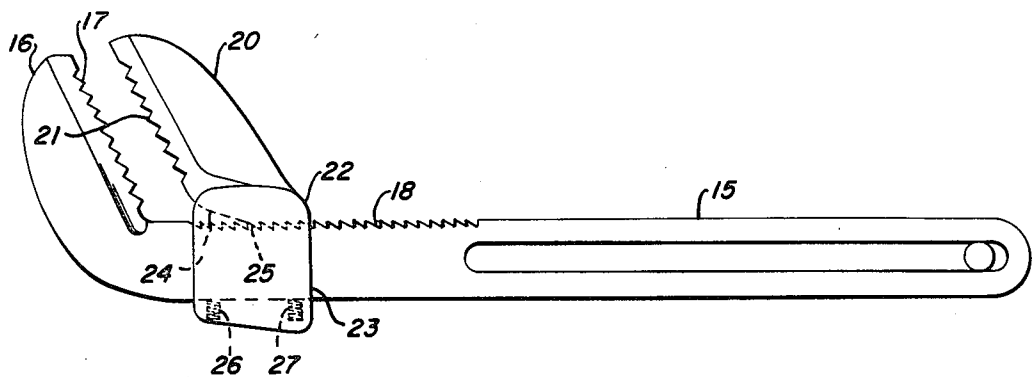


FIG. 2

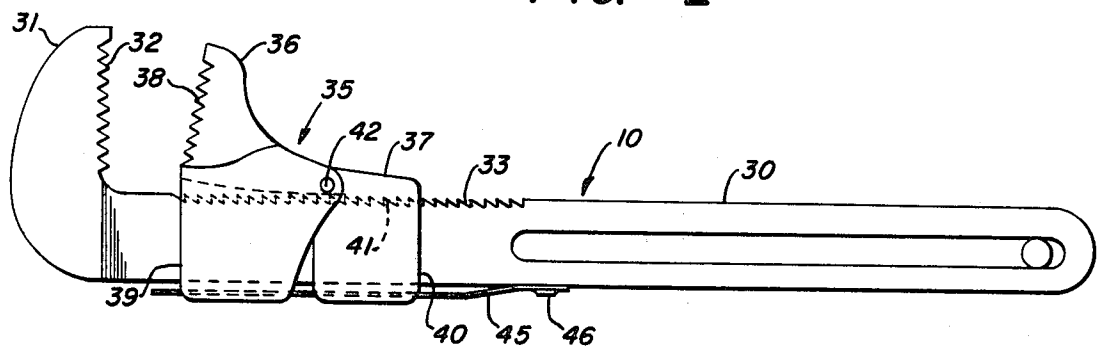
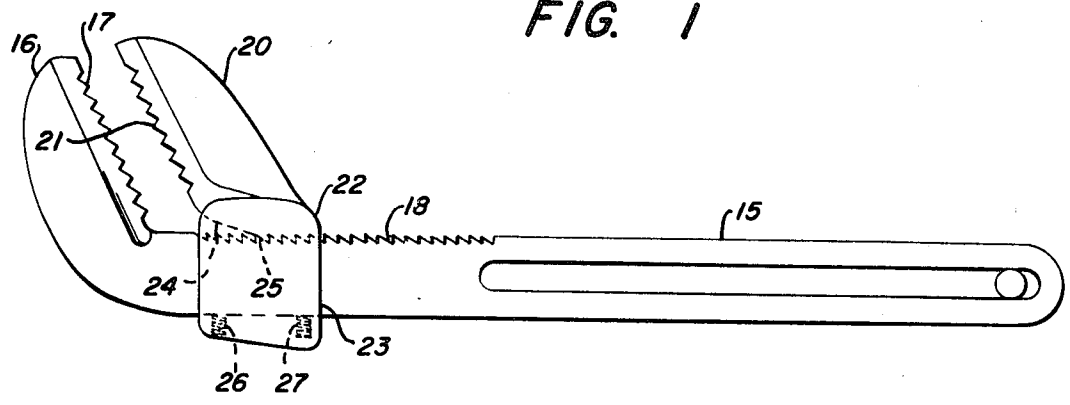


FIG. 1



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PIPE WRENCHES

This application is a continuation-in-part application of Ser. No. 21,376, filed Mar. 20, 1970, now abandoned having the same title.

This invention relates to pipe wrenches and, more particularly, to rapid-adjusting-type wrenches which are nonslip.

Pipe wrenches, in general, are one of the oldest known tools. However, the advancement in pipe wrenches has been slow and the standard pipe wrench developed years ago having the thread assembly which must be thumbed upward or downward to open and close the wrench is still prevalent. The user of that particular tool continues to operate with the built-in inefficiencies which include slippage and continual thumb adjustment to maintain the jaws in gripping relationship to the workpiece.

My invention improves on the old-fashioned pipe wrench used heretofore while, at the same time, simplifying construction thereof. My pipe wrench eliminates the thread portion and provides instantaneous adjustment. My pipe wrench also offers a tight, nonslip fit over a workpiece while, at the same time, permitting rapid removal of the pipe wrench, as well as the desired slipping movement in the reverse turning direction. These advantages are accomplished by a simply designed tool which is both easily and inexpensively manufactured.

My invention is a pipe wrench having a rigid jaw and handle and a movable jaw assembly which is slidably mounted on the handle. The movable jaw and the handle have teeth which mate in locking engagement. Spring means are provided to urge the engagement and to permit a disengagement by the depression thereof.

In the accompanying drawings, I have shown my presently preferred embodiments in which:

FIG. 1 is a frontal view of my pipe wrench; and

FIG. 2 is a frontal view of another embodiment of my pipe wrench.

My pipe wrench is generally designated 10. Pipe wrench 10 comprises a handle terminating in a rigid jaw and a movable jaw assembly for cooperation therewith. As shown in FIG. 1, the movable jaw assembly can be a single piece or as shown in FIG. 2, two pieces.

With reference to FIG. 1, I have shown a rigid handle 15 terminating in a rigid jaw 16 which is inclined obtusely to the handle 15. Jaw 16 has a serrated surface 17 for gripping a workpiece such as a pipe. A section of teeth 18 extends along the upper surface of the handle 15.

The movable jaw assembly of FIG. 1 comprises a one-piece jaw 20 having a serrated surface 21 in parallel alignment with the serrated surface 17 of rigid jaw 16. Jaw 20 has a terminal section 22 through which opening 23 extends. A surface 24 of jaw 20 which helps define the opening 23, has teeth 25 for locking engagement with teeth 18 of handle 15 which is inserted for slidable movement within opening 23. Surface 24 has a curved portion extending to the serrated surface 21 of jaw 20 and this curved portion also contains the teeth 25. A spring means is positioned within the opening in communication with terminal section 22 and the surface of handle 15 which is opposed to that surface of handle 15 having teeth 18. This spring means is shown as helical springs 26 and 27 which are positioned in accommodating depressions in the jaw 20 and the handle 15.

The embodiment of FIG. 1 is operated by pushing terminal section 22 inward to compress springs 26 and 27 which, in turn, disengage the locking engagement of teeth 18 and 25. When the teeth are no longer engaged, the movable jaw 20 is slidably adjustable for any size workpiece. Because of the curvature of surface 24 and the continuing engagement of teeth 24 and 18 about the curvature, a workpiece is securely positioned in nonslip engagement by the serrated surfaces 17 and 21 for turning. The pipe wrench, however, can be turned in an opposite direction to cause sliding of the serrated surfaces 17

and 21 to permit normal functioning of the pipe wrench.

The movable jaw assembly can also be a two-component assembly as shown in FIG. 2. In FIG. 2, a handle 30 terminates in a jaw 31 having serrated gripping surfaces 32, the jaw 31 being normal to handle 30. Teeth 33 extend along an upper surface of handle 30.

The movable jaw assembly 35 comprises jaw 36 and sliding adjuster 37. Jaw 36 has a serrated gripping surface 38 in substantial parallel relationship to serrated surface 32 of jaw 31. Both the jaw 36 and the sliding adjuster 37 have aligned openings 39 and 40, respectively, therethrough. The surface defining opening 39 of jaw 36 is smooth and the opening 40 of sliding adjuster 37 has teeth 41 for locking engagement with the teeth 33 of handle 30. Jaw 36 and sliding adjuster 37 are pivotally connected by pin 42, the connection being in an area adjacent to teeth 41. A tension leaf spring 45 is secured to the handle 30 by screw means 46. Leaf spring 45 extends continually outwardly between openings 39 and 40 and handle 30. The operation of this embodiment is similar to the earlier described embodiment of FIG. 1. In the embodiment of FIG. 2, locking engagement is made by the teeth 41 of the sliding adjuster 37 and, therefore, the jaw 36 is free to pivot slightly about pin 42. While tightening the workpiece, serrated jaws are in nonslip locking engagement and while reversing the pipe wrench the slight pivot of movable jaw 36 permits free movement of the serrated surfaces about the workpiece. Adjustment is made in the same manner as the embodiment of FIG. 1 in that the sliding adjuster 37 is pushed inward to depress the leaf spring 45 and permit slidable movement of the jaw assembly 35 about the handle 30.

I have thus developed an improvement in pipe wrenches which eliminates the cumbersome and outdated, inefficient pipe wrenches known heretofore and replaced them with an instantaneously adjustable, nonslip pipe wrench.

I claim:

1. A pipe wrench comprising:

A. A handle terminating in an obtusely inclined rigid jaw having a serrated gripping surface, said handle having a plurality of teeth along one surface thereof;

B. A movable jaw having a serrated gripping surface in parallel alignment with the gripping surface of the rigid jaw and a terminal section having an opening therethrough to slidably engage the handle, said terminal section having a plurality of teeth along a portion of a surface defining said opening and extending along a curved portion of the jaw to substantially the serrated teeth, said teeth to lockingly engage the teeth of said handle; and

C. Spring means positioned to communicate with a surface of said opening and a surface of said handle, the depression of which disengages the teeth permitting sliding adjustment.

2. A pipe wrench comprising:

A. A handle terminating in a rigid jaw having a serrated gripping surface, said handle having a plurality of teeth along one surface thereof;

B. A movable jaw assembly including a movable jaw member having a serrated gripping surface in parallel alignment with the gripping surface of the rigid jaw and a smooth opening therethrough and a sliding adjuster having an opening therethrough with teeth, said sliding adjuster pivotally secured to said movable jaw member in the area of said teeth so that said openings are in alignment to receive the handle; and

C. Spring means positioned to communicate with a surface of said openings and a surface of said handle, the depression of which disengages the teeth permitting sliding adjustment.

3. The wrench of claim 2 wherein the spring means is a tension leaf spring, said leaf secured at one end by connecting means to the handle and extending increasingly outward from said handle through said openings.

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